

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

---

1. (original) A method for controlling at least one computing element with a universal console (UC), comprising:
- storing a user's preferences for the universal console;
  - selecting a computing element to control with the UC;
  - receiving by the UC a canonical user interface (UI) representation of the computing element's UI;
  - instantiating a concrete UI by the UC taking into account the stored user preferences;
  - selecting at least one action-command to be carried out by the computing element;
  - transmitting to the computing element said data associated with said at least one action-command using a remote procedure call mechanism.
2. (original) A method according to claim 1, wherein said selecting at least one action-command includes requesting information about the state of said at least one computing element.
3. (original) A method according to claim 1, further comprising interacting with at least one group hierarchy to obtain data in connection with said selected at least one action-command to be carried out by the computing element.
4. (original) A method according to claim 1, wherein said storing includes storing data indicating at least one disability of the user.
5. (original) A method according to claim 1, further including carrying out said action-command by said computing element.
6. (original) A method according to claim 1, further including receiving by the UC notifications from the computing element.

7. (original) A method according to claim 6, wherein said notifications include at least one of an error message, warning message, status update message and state change.
8. (original) A method according to claim 1, wherein said canonical UI representation is formatted according to an XML stream.
9. (original) A method according to claim 1, further including requesting a list of available devices that may be controlled by UC.
10. (original) A method according to claim 1, wherein communications between said UC and said computing element are made via Hypertext Transfer Protocol (HTTP).
11. (original) A method according to claim 1, wherein said computing element is one from the group of a computing device and an application.
12. (original) A method according to claim 1, wherein said remote procedure call mechanism makes calls according to SOAP (Simple Object Activation Protocol).
13. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a parameter for choosing one element  $a$  from a set  $A$ .
14. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a parameter for selecting a subset  $A'$  from a set  $A$ .
15. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a parameter for selecting one from the group of True/False, Off/On, OK/Cancel and Yes/No.

16. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a parameter for selecting an integer  $n$  in the range  $n_1$  through  $n_2$ , with increment  $\delta$ .
17. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a parameter for selecting a real number  $x$  in the range  $x_1$  through  $x_2$ , with increment  $\delta$ .
18. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a parameter type for an arbitrary string  $s$ .
19. (original) A method according to claim 18, wherein said arbitrary string  $s$  is to be selected from a suggestion set of strings  $S$ .
20. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a parameter type for the modification of a given first string  $s$ , resulting in a second string  $s'$ .
21. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a parameter type for ordering the elements of set  $A$  into  $A'$ .
22. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a parameter type for pairing set  $A$  elements with set  $B$  elements.
23. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a group construct that contains at least one of commands and subgroups.

24. (original) A method according to claim 1, wherein said canonical UI representation includes a representation associated with a command construct that specifies at least one action to send to the controlled element that will carry out the action-command.
25. (original) A method according to claim 24, wherein said canonical UI representation includes a description of the parameters associated with the at least one action.
26. (original) A computer readable medium bearing computer executable instructions for carrying out the method of claim 1.
27. (original) A modulated data signal carrying computer executable instructions for use in implementing the method of claim 1.
28. (withdrawn) A data structure formatted according to extensible markup language (XML) including data representative of a canonical UI description of a device to be controlled for use by a universal console.
29. (withdrawn) A data structure according to claim 28, wherein said canonical UI description includes a representation associated with a parameter for choosing one element *a* from a set *A*.
30. (withdrawn) A data structure according to claim 29, wherein said canonical UI description includes a representation associated with a parameter for selecting a subset *A'* from a set *A*.
31. (withdrawn) A data structure according to claim 28, wherein said canonical UI description includes a representation associated with a parameter for selecting one from the group of True/False, Off/On, OK/Cancel and Yes/No.

32. (withdrawn) A data structure according to claim 28, wherein said canonical UI description includes a representation associated with a parameter for selecting an integer  $n$  in the range  $n_1$  through  $n_2$ , with increment  $\delta$ .

33. (withdrawn) A data structure according to claim 28, wherein said canonical UI description includes a representation associated with a parameter for selecting a real number  $x$  in the range  $x_1$  through  $x_2$ , with increment  $\delta$ .

31  
34. (withdrawn) A data structure according to claim 28, wherein said canonical UI description includes a representation associated with a parameter type for an arbitrary string  $s$ .

35. (withdrawn) A data structure according to claim 34, wherein said arbitrary string  $s$  is to be selected from a suggestion set of strings  $S$ .

36. (withdrawn) A data structure according to claim 28, wherein said canonical UI description includes a representation associated with a parameter type for the modification of a given first string  $s$ , resulting in a second string  $s'$ .

37. (withdrawn) A data structure according to claim 28, wherein said canonical UI description includes a representation associated with a parameter type for ordering the elements of set  $A$  into  $A'$ .

38. (withdrawn) A data structure according to claim 28, wherein said canonical UI description includes a representation associated with a parameter type for pairing set  $A$  elements with set  $B$  elements.

39. (withdrawn) A data structure according to claim 28, wherein said canonical UI description includes a representation associated with a group construct that contains at least one of commands and subgroups.

40. (withdrawn) A data structure according to claim 28, wherein said canonical UI description includes a representation associated with a command construct that specifies at least one action to send to the controlled element that will carry out the action-command.
41. (withdrawn) A data structure according to claim 40, wherein said canonical UI description includes a description of the parameters associated with the at least one action.
42. (original) A computer system wherein a user controls at least one computing element, said system comprising:
- at least one computing element each having a canonical user interface (UI) description associated therewith; and
  - a universal console (UC) for controlling said at least one computing element and storing user preferences therein;
  - wherein a computing element of said at least one computing element communicates its associated canonical UI to said UC,
  - wherein said UC generates a concrete UI description from said canonical UI and said stored user preferences, and
  - wherein a user thereafter utilizes said UC to control said computing element via said concrete UI by selecting at least one action-command.
43. (original) A computer system according to claim 42, wherein said selecting at least one action-command includes requesting information about the state of said at least one computing element.
44. (original) A computer system according to claim 42, wherein a user of said UC interacts with at least one group hierarchy to obtain data in connection with said selected at least one action-command to be carried out by the computing element.
45. (original) A computer system according to claim 42, wherein said storage of user preferences includes the storage of data indicating at least one disability of the user.

46. (original) A computer system according to claim 42, wherein said at least one computing element carries out said at least one action-command.
47. (original) A computer system according to claim 42, wherein said UC receives notifications from the at least one computing element.
48. (original) A computer system according to claim 47, wherein said notifications include at least one of an error message, warning message, status update message and state change.
49. (original) A computer system according to claim 42, wherein said canonical UI description is formatted according to an XML stream.
50. (original) A computer system according to claim 42, wherein said selecting at least one action-command includes requesting a list of available devices that may be controlled by UC.
51. (original) A computer system according to claim 42, wherein communications between said UC and said computing element are made via Hypertext Transfer Protocol (HTTP).
52. (original) A computer system according to claim 42, wherein said computing element is one from the group of a computing device and an application.
53. (original) A computer system according to claim 42, wherein said remote procedure call mechanism makes calls according to SOAP (Simple Object Activation Protocol).
54. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a parameter for choosing one element  $a$  from a set  $A$ .

55. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a parameter for selecting a subset  $A'$  from a set  $A$ .

56. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a parameter for selecting one from the group of True/False, Off/On, OK/Cancel and Yes/No.

57. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a parameter for selecting an integer  $n$  in the range  $n_1$  through  $n_2$ , with increment  $\delta$ .

58. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a parameter for selecting a real number  $x$  in the range  $x_1$  through  $x_2$ , with increment  $\delta$ .

59. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a parameter type for an arbitrary string  $s$ .

60. (original) A computer system according to claim 59, wherein said arbitrary string  $s$  is to be selected from a suggestion set of strings  $S$ .

61. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a parameter type for the modification of a given first string  $s$ , resulting in a second string  $s'$ .

62. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a parameter type for ordering the elements of set  $A$  into  $A'$ .



63. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a parameter type for pairing set *A* elements with set *B* elements.

B1 64. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a group construct that contains at least one of commands and subgroups.

65. (original) A computer system according to claim 42, wherein said canonical UI description includes a description associated with a command construct that specifies at least one action to send to the controlled element that will carry out the action-command.

66. (original) A computer system according to claim 65, wherein said canonical UI description includes a description of the parameters associated with the at least one action.

---